

Appl. No. 10/747,875
Amdt. Dated March 23, 2005

Attorney Docket No.: ONX-113/DIV
Reply to Office Action of Jan. 11, 2005

COMPLETE LISTING OF ALL CLAIMS

Kindly cancel claims 1-7 and 14-16 and amend claims 11, 12 and 13 as shown in the listing of claims below. This listing of claims will replace all prior versions, and listings of claims in the application.

- 1 1-7. (cancel)
- 1 8. (original) A method for measuring a position of a micromachined electrostatic actuator,
2 comprising:
3 applying one or more voltage pulses to the actuator wherein a voltage changes from a first
4 state to a second state and remains in the second state for a time Δt_{pulse} before returning to the
5 first state;
6 measuring a capacitance of the actuator when the voltage changes state;
7 and determining a position of the actuator from the capacitance.
- 1 9. (original) The method of claim 8, wherein the capacitance is measured by integrating a
2 current to the actuator with an integrator and converting the integrated current to a digital
3 word with an analog-to-digital converter (ADC).
- 1 10. (original) The method of claim 9, wherein the integrator measures charge transferred during a
2 transition of one or more of the voltage pulses.
- 1 11. (currently amended) The method of claim 9, wherein the time Δt_{pulse} is greater than or equal
2 to the sum of time-delay of the integrator Δt_i and $[[an]]$ a conversion time of the ADC Δt_{ADC} .
- 1 12. (currently amended) The method of claim 8, wherein a frequency of the ~~PWM signal~~ one or
2 more voltage pulses is above a mechanical bandwidth of the actuator.
- 1 13. (currently amended) The method of claim 8, wherein the time Δt_{pulse} is varied by modulating
2 the duty cycle of a fast pulse train with a slower base-band signal.
- 1 14-16. (cancel)
- 1 17. (new) The method of claim 8 wherein each of the one or more pulses is guaranteed high at a
2 beginning of the time Δt_{pulse} and guaranteed low at the time Δt_{pulse} .